Can Free Trade Be Clean Trade?

A summary of EEPSEA Research Report 2002-RR7 Trade Liberalization and Pollution: Evidence from the Philippines, by Rafaelita M. Aldaba and Caesar B. Cororaton, (Philippine Institute for Development Studies, 106 Amorsolo Street, Legaspi Village, Makati City, Philippines. Contact: afita@mail.pids.gov.ph)

The environmental impact of global trade is high on the international agenda. Among other concerns, some commentators fear that freer trade will shift industrial production to developing countries where environmental standards are low, increasing pollution. This is a critical issue for the many Southeast Asian countries that have opened up their economies to the rest of the world over the last decade.

A new study has looked the effects of trade liberalization in the Philippines on the country's environmental performance. It finds that, far from creating a pollution haven, trade liberalization may actually have helped clean up the country's environment. In light of this, the researchers recommend that the government of the Philippines should continue the trade liberalization process and augment it with well-enforced environmental policies that encourage clean technology and reduce pollution.

The Impact of Tade Reforms

The report was produced by Rafaelita M. Aldaba and Caesar B. Cororaton, from the Philippine Institute for Development Studies. They aimed to assess the environmental impact of the trade liberalization process that was carried out in the Philippines in the 1990s. These trade reforms not only narrowed tariff ranges on many goods but also eliminated many restrictions, such as import licenses and import bans. By 1996, the number of import restrictions had fallen dramatically and covered only three percent of the Philippine Standard Commodity Classification (PSCC) lines. Average implicit tariffs are estimated to have declined from 28.6 percent in 1990 to 16.8 percent in 2000.

These trade reforms brought about significant changes in the country's economic structure. There have been substantial shifts of resources both between and within sectors. At the outset of the trade reforms, the industrial sector had the largest share of the economy, at 40.5 percent. By 2000, its share stood at only just over 37 percent. In comparison the service sector grew from almost 40 percent to over 43 percent and is now the country's largest economic sector.

Modeling the Impact of Liberalization

The researchers focused their study on the pollution caused by manufacturing industries in the Philippines. The companies in this sector are key sources of many air and water pollutants. The researchers analyzed the impact of tariff reforms on this sector using a computable general equilibrium (CGE) model. CGE models are macroeconomic simulations that have been applied to a

wide range of issues such as taxation and trade policy. The researchers used their model to look at the impact of trade reforms on pollution intensity, industry output, resource allocation, income levels and income distribution. They compared what happened between 1991 and 1999 during liberalization to what would have happened if the policies in place in 1991 had been maintained. Data was gathered from a number of sources including government tariff records. Unfortunately the researchers found that data on both total pollution loads and pollution intensities in the Philippines was very limited. The best available information was the data sets of the Philippine Environment and Natural Resources Accounting Project (ENRAP). This project estimated air and water pollution by industry using emission factors and rapid assessment methodologies devised by the World Health Organization (WHO) and the US Environmental Protection Agency (EPA).

The Effects of Trade

Overall the researchers found that trade reforms had boosted the economy and brought about improvements in both income and income distribution. They found that the reform program had increased imports and raised real GDP growth by 0.32 percent per year from 1991 to 1999. They found that this positive effect on GDP growth had, in the second half of the decade, been translated into slightly higher direct and indirect tax revenues for the government. For the man in the street, they found that trade liberalization had raised the average wage rate by 1.79 percent per year from 1996 to 1999. The researchers found that there had also been some significant changes in the structure of the manufacturing sector. In 1990, consumer goods - such as food products and beverages - comprised the bulk of manufacturing activity. However, during the 1990s, a shift towards intermediate goods - such as chemicals and textiles - became evident.

The Pollution Picture

The environmental effect of these economic changes was small but generally positive. The researchers reported that, even without changes in environmental policies, trade liberalization had improved the environmental performance of the country's manufacturing industries with respect to a number of key pollutants. They found that particulate matter (PM) pollution had declined by 0.25 percent, biological oxygen demand (BOD5) by 0.09 percent and suspended solid (SS) pollution by 0.03 percent. On the negative side of the balance sheet, they found that tariff reforms had resulted in slight increases in SOX, NOX, CO, and VOC emissions. Although their model did not include the impact of trade liberalization on natural resource depletion, the researchers found that most primary production had been reduced by the reforms. They found that agricultural output had declined by 0.19 percent from 1991 to 1999, while mining fell by 0.54 percent. Forestry and fishing decreased by 0.21 percent and 0.27 percent, respectively, during the same period. From this, the researchers deduced that trade liberalization probably resulted in a reduced depletion of natural resources.

Adding Technology to the Picture

Environmental technology is often touted as one way to mitigate the negative impact of economic development. To see what role such innovation might have in the Philippines, the researchers undertook a sensitivity analysis. This was designed to provide some broad insights into how

improved technology might change the impact of trade liberalization. It investigated the implementation of technology that would bring about a five percent lower pollution coefficient in seven key industrial sectors. Not surprisingly, the researchers found that when technological improvement was added to trade liberalization the level of all industrial pollutants (including SOX, NOX, CO, and VOC emissions) dropped.

Why Does Trade Reform Help?

To explain their overall findings, the researchers noted that trade reforms may improve environmental quality through the generation of higher incomes which, in turn, lead to improved technology and so to reduced emissions. Rapid growth, they argued, produces investment in new capital goods, which are likely to be cleaner. Moreover, improvements in income due to trade liberalization intensify the political pressure for environmental clean up and for greater investments in clean production technologies. In light of this, the researchers argue that trade reforms are compatible with efforts to protect the environment to the extent that they eliminate policy distortions, create effective competition, promote economic growth and improve the efficiency of resource use.

Policies and priorities

Despite this positive message, the researchers noted a number of limitations in their study. The most severe of these was the lack of data for estimating emission coefficients in the Philippines. To allow better monitoring of impacts in the future, the researchers recommended that the regulating body, DENR, should improve its monitoring, data collection and management capabilities.

Overall, the researchers recommended that the government continue its trade liberalization policies as well as other economic reforms aimed at promoting competition and efficiency in the economy. Their study does not support the contention that freer trade is inevitably damaging to the environment. Instead it suggests that trade liberalization has had mildly positive effects on the Philippines' environment. But the modest size of these improvements shows that trade policy alone will not produce the big advances needed. Attention should be re-focused on the design and enforcement of policies specifically targeted at reducing environmental damage. The debate over trade and environment should not distract policy makers from this task.